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Awareness About Wegeners Granulomatosis Disease Among Dental Students

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ABSTRACT

Wegener's granulomatosis (WG) is a systemic disease characterized by necrotizing granulomatous inflammation of the upper and lower respiratory tract, glomerulonephritis, and vasculitis. The clinical manifestations and laboratory findings suggest an autoimmune disease resulting from a hypersensitivity reaction to some environmental agent. The purpose of the survey is for assessing the awareness about wegeners granulomatosis disease amongst dental students. A cross-sectional survey was done with questionnaire comprising a total of ten multiple-choice questions which were distributed to 100 undergraduate dental students. The questions elicited awareness about the etiology, clinical features, diagnostic tests, treatment methods and complications of wegeners granulomatosis. The responses were collected and analysed. 7% were aware of etiology of Wegeners granulomatosis, 9% were aware of clinical features of Wegeners granulomatosis, 5% were aware of diagnostic tests of Wegeners granulomatosis, 5% were aware of the treatment of Wegeners granulomatosis, and 4% were aware of complications of Wegeners granulomatosis. The awareness of Wegener's granulomatosis among dental students is inadequate. Granulomatosis of Wegener is a relatively uncommon, autoimmune condition of unknown origin. Without medication, thus many patients would then inevitably die of those same illness. Therefore, awareness and education initiatives must be pursued to enlighten students about this illness.

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INTRODUCTION

Wegener's granulomatosis (WG) is indeed a systemic illness typified by the necrotizing granulomatous inflammatory response of the respiratory tract, glomerulonephritis, as well as vasculitis. The disease was first identified as a distinguishable syndrome of Friedreich Wegener only in 1936 (Korantzopoulos *et al.*, 2004; Restrepo *et al.*, 2003). The aetiology of Wegener's granulomatosis is mostly unknown. Clinical symptoms and laboratory investigations indicate that it is an immune-mediated illness is characterised by a hypersensitivity to a specific environmental precursor. Like many other autoimmune disorders, there is unquestionably an inherited biological predisposition to this sickness.

Clinical as well as pathological observations of Wegener's granulomatosis frequently vary considerably in patients depending mostly on the phase of the infection and perhaps the tissues and organs involved. Conversely, the pathological triad comprises of inflammation of the both small arteries and veins (vasculitis), necrotizing granulomas of both

the lungs and respiratory tract, along with crescentic glomerulonephritis (Lamprecht and Gross, 2004; Scheinfeld, 2001).

The clinical presentation of Wegener granulomatosis may vary considerably from one patient from another. One or even more parts of the body may be implicated immediately or in a number of areas. The initial symptoms can be severe or progressive. Complaints and progression of the disease steadily increase significantly. In most cases, nevertheless, complaints can be referred to as the upper respiratory tract but also include sore throat, hemoptysis, extreme rhinorrhea, otitis media with hearing problems and sinonasal rhinitis.

Inflammation of nose with bleeding, erosion and also the perforation of nasal septum leading to the collapse of the nasal bridge of the nose may occur. Other early symptoms also include lethargy, fever, skin ulcers, ocular dysfunction, and loss of weight and anorexia. After weeks or months, the spread of the vascular phase frequently results in dispersed vasculitis, necrotizing skin problems, lung nodular lesions with cavitation and renal complicity that can lead to glomerulonephritis.

Renal disease is a defining feature of the pervasive disease. The prognosis is poor without medication. In such cases, the disease spreads quickly, symptoms aggravate, and patients often end up dying. The expected lifespan of symptomatic patients is 1 to 2 years. Modern therapy can slow the gradual improvement of this situation and lead to long-term periods of remission in a significant number of such patients (Creager, 2019).

While oral lesions have been documented to occur in patients, only 2 per cent of cases recorded initial symptoms of oral lesions.8 Strawberry gingivitis is among the characteristic signs of WG. This feature, assumed to be an early expression, is exceedingly rare, but it is indicative while present. The oral lesions of microstructural polyangiitis closely match this same gingival lesions of WG13 and therefore are difficult to discern even if by light microscope. The purpose of the survey is for assessing the awareness about wegeners granulomatosis disease amongst dental students.

MATERIALS AND METHODS

A cross-sectional survey was done with questionaire comprising a total of ten multiple-choice questions which were distributed to 100 undergraduate dental students. The questions elicited awareness about the etiology, clinical features, diagnostic tests, treatment methods and complications of wegeners granulomatosis. The responses were collected and analysed.

RESULTS

7% were aware of etiology of Wegeners granulomatosis (Figure 1), 9% were aware of clinical features of Wegeners granulomatosis (Figure 2), 5% were aware of diagnostic tests of Wegeners granulomatosis (Figure 3) 5% were aware of the treatment of Wegeners granulomatosis (Figure 4), and 4% were aware of complications of Wegeners granulomatosis (Figure 5).

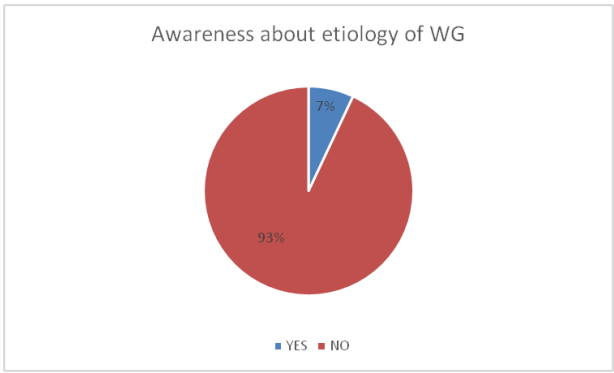

Figure 1: Awareness about etiology of WG

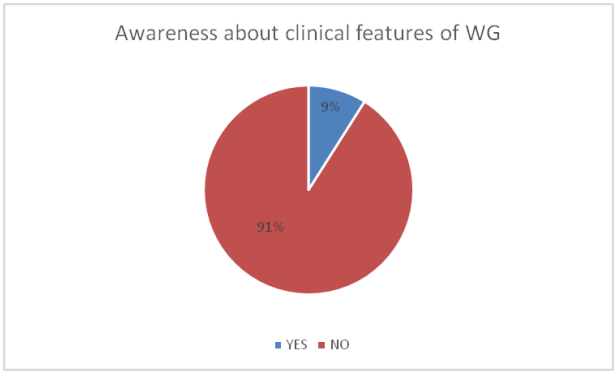

Figure 2: Awareness about clinical features of WG

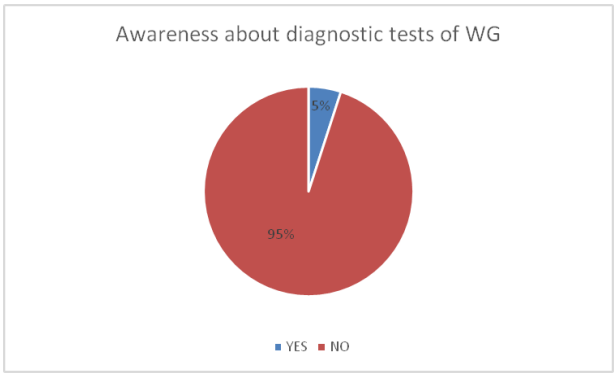

Figure 3: Awareness about diagnostic tests of WG

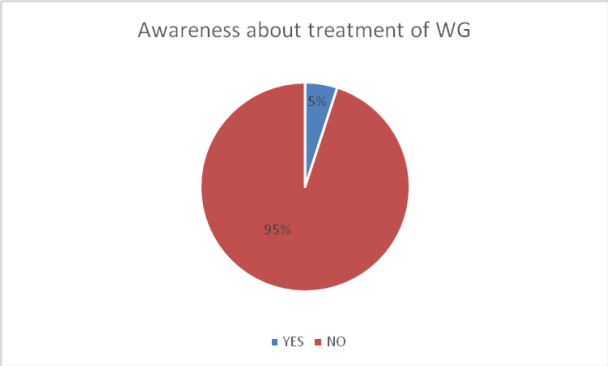

Figure 4: Awareness about the treatment of WG

Figure 5: Awareness about complications of WG

DISCUSSION

The diagnostic requirements, as established by the Ameican College of Rheumatology for assessment of WG, include at least 2 of the following four criteria : (1) oral ulcers or persistent nasal discharge; (2) appearance of nodules, defined infiltrate with cavity in the lung radiography; (3) nephritic urine sediment; and (4) granulomatous inflammation in either the biopsy. While oral ulceration is among the criteria needed by the ACR for diagnosis of WG, it typically occurs later there in disease.

The antineutrophil cytoplasmic antibody assay (ANCA) is a serological test which became a necessary adjunct also to diagnose WG in the early 1990s. Currently, it is one of the most common techniques being used to assist and guide to establish the diagnosis. The ANCA test does have a high sensitivity (92 per cent) and high specificity (96 per cent) for WG. The ANCA test is indeed the screening process of choice with this disease. Use of this method allows early diagnosis and early intervention of such patients (Jacob *et al.*, 2003; Smit *et al.*, 2011).

Cyclophosphamide and prednisone are also the most common treatment combination in most patients today. Because both medications predispose patients to many life-threatening complications, close medical monitoring of this treatment is essential. Long-term cyclophosphamide treatment is associated with multiple cytotoxic effects and elevated risk of different forms of malignancies such as bladder cancer and lymphoma. Prednisone and the other drugs suppress the immune response that can cause infection or cancer (Jacob *et al.*, 2003; Metzler, 2003).

Good prognosis is also correlated with younger patients diagnosed, early recognition, restriction of the infection to fewer sites of the body, lack of renal disease, and acceptance and efficacy of therapy. Low prognosis is also linked with the progression of the virus to different anatomical locations, the older population, renal impairment, delay in detection and resistance or ineptness of medications. Unrestrained sepsis instead of the unregulated disease seems to be the primary cause of morbidity and mortality with WG (Timo Atula, 2000; Hartl *et al.*, 1998).

Given the possible side effects of such immunosuppressant drugs, alternative treatments are often prescribed until remission is reached and sustained over a certain period of time. The prognosis for such patients dramatically improved with early detection and treatment. More work is required to establish the external cofactors and the genetic connection to this life-threatening disease (Koldingsnes, 2002; Ponniah *et al.*, 2005).

The dental surgeon has both a significantly higher probability of detecting presumed systemic vasculitis disorder mostly on the grounds of typical oral tests, particularly during the early stage of the disease. This could contribute to a timely referral to a pulmonologist, rheumatologist, or urologist to provide an opportunity for early diagnosis. It is essential that referrals to the oral care provider be obtained before immunomodulatory treatment is developed, as the condition can be lethal if treatment is deferred.

Dental assessment will concentrate on finding and removing a possible cause of infection, but no longitudinal studies have shown sepsis probably originated from dental diseases. The dental healthcare professional may also meet these patients during treatment; if that is indeed the case, given the fact that the literature provides comprehensive guidance for dental treatment of patients with WG, it is advisable to follow the directions prudently in such patients.

CONCLUSION

The awareness of Wegener's granulomatosis among dental students is inadequate. Granulomatosis of

Wegener is a relatively uncommon, autoimmune condition of unknown origin. Without medication, thus many patients would then inevitably die of those same illness. Therefore, awareness and education initiatives must be pursued to enlighten students about this illness.

Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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